Complete Summary

GUIDELINE TITLE

Surgical treatment of disease and injuries of the spleen.

BIBLIOGRAPHIC SOURCE(S)

Society for Surgery of the Alimentary Tract (SSAT). Surgical treatment of disease and injuries of the spleen. Manchester (MA): Society for Surgery of the Alimentary Tract (SSAT); 2004 Feb 21. 3 p. [5 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Disease or injuries of the spleen:

- Traumatic injury to spleen
- Intraoperative splenic injury
- Hematologic diseases including immune thrombocytopenic purpura (ITP); hereditary spherocytosis; thalassemia major; certain forms of autoimmune hemolytic anemia unresponsive to medical management; myeloproliferative disorders; thrombotic thrombocytopenic purpura (TTP); and hairy-cell leukemia unresponsive to other treatment strategies
- Splenic abscesses, cysts, sinistral portal hypertension secondary to isolated splenic vein thrombosis or obstruction, splenic mass presumed to be a primary or undiagnosed neoplasm, malignancy in an adjacent organ

GUIDELINE CATEGORY

Evaluation
Treatment

CLINICAL SPECIALTY

Family Practice
Gastroenterology
Hematology
Internal Medicine
Oncology
Pediatrics
Surgery

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To guide primary care physicians to the appropriate utilization of surgical procedures on the alimentary tract or related organs

TARGET POPULATION

Patients (adults and children) with disease or injuries of the spleen

INTERVENTIONS AND PRACTICES CONSIDERED

Evaluation

1. Computed tomography (CT) scanning
2. Ultrasound

Treatment

1. Non-operative support with in-hospital observation
2. Splenectomy (open or laparoscopic)
3. Spleen salvage
    - Suture plication to achieve hemostasis
    - Topical hemostatic agents (including absorbable mesh)
    - Electrocautery
    - Argon beam coagulation
4. Prophylaxis against post-splenectomy sepsis, including:
    - Daily penicillin (certain pediatric patients)
    - Pneumococcal vaccine using Pneumovax (non-elective splenectomy)
    - Vaccination against pneumococcus, Haemophilus influenza, meningococcus (before elective splenectomy)

MAJOR OUTCOMES CONSIDERED

- Mortality rate after splenectomy

- Postoperative complications of splenectomy
- Late sequelae related to splenectomy, including post-splenectomy sepsis

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not applicable

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The Society for Surgery of the Alimentary Tract (SSAT) guidelines are based on statements and recommendations that were overwhelmingly supported by clinical evidence. Each represents a consensus of opinion and is considered a reasonable plan for a specific clinical condition.

(See companion document: Gadacz TR, Traverso LW, Fried GM, Stabile B, Levine BA. Practice guidelines for patients with gastrointestinal surgical diseases. J Gastrointest Surg 1998;2:483-484.)

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guidelines were reviewed by several committee members and then by the entire committee on several occasions. Each guideline was then sent back to the original author for final comment and reviewed again by the committee. Each guideline was approved by the Board of Trustees of the Society for Surgery of the Alimentary Tract and final comments were reviewed by the committee.

(See companion document: Gadacz TR, Traverso LW, Fried GM, Stabile B, Levine BA. Practice guidelines for patients with gastrointestinal surgical diseases. J Gastrointest Surg 1998;2:483-484.)

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Indications for Splenectomy

Traumatic injury to the spleen is no longer an immediate or mandatory indication for operation or splenectomy. Computed tomography (CT) scanning or ultrasound can accurately characterize splenic injury in patients with blunt trauma. Non-operative support with in-hospital observation for up to 5 days is indicated in children and adults with splenic injury and hemodynamic stability, provided there is no evidence of other intra-abdominal injuries that might require laparotomy. Accepted indications for operation in adults include hemodynamic instability, bleeding >1,000 mL, transfusion of more than 2 units of blood, or other evidence of ongoing blood loss. In children under 14 years old, more aggressive non-operative support is justified. When operative intervention is necessary, preservation of the spleen should be considered if bleeding can be controlled quickly and when there are no other life-threatening intra-abdominal injuries. Again, in children under 14 years of age, more aggressive attempts at intraoperative splenic salvage are justified. Splenic autotransplantation with a free-graft for maintenance of specific splenic immunity is of no proven value.

Iatrogenic (Intraoperative) Splenic Injury

The spleen may be injured during the performance of intraperitoneal procedures, especially those involving the distal esophagus, stomach, distal pancreas, or splenic flexure of the colon. These injuries may occur directly from operative retractors or by traction on capsular adhesions leading to persistent bleeding. To avoid splenectomy, hemostasis should be attempted using suture plication, topical hemostatic agents (including absorbable mesh), electrocautery, or argon beam coagulation. However, if secure hemostasis is not possible before blood loss is sufficient to require blood transfusion, the patient is better managed by splenectomy than by repeated attempts at splenic salvage.

Hematologic Diseases

Indications for splenectomy should be determined with the close cooperation of a hematologist/oncologist. Common indications include immune thrombocytopenic purpura (ITP), hereditary spherocytosis, thalassemia major, and certain forms of autoimmune hemolytic anemia unresponsive to medical management. Thrombotic thrombocytopenic purpura (TTP) and hairy-cell leukemia unresponsive to other treatment strategies are occasional indications for splenectomy.

Myeloproliferative disorders may lead to massive splenomegaly. Related symptoms may be best relieved by splenectomy although it does not usually alter overall survival. This information should be clearly discussed with the patient prior to operation, and they should be aware of the frequent requirement for blood or blood products when splenectomy is carried out for very large spleens. Massive splenomegaly may preclude a laparoscopic approach. In these circumstances an open or "hand-assisted" laparoscopic technique may be used. The operative morbidity and mortality rates are higher in these patients due to the hematologic comorbidity.

Other Indications for Splenectomy

Less common indications for splenectomy include splenic abscesses, cysts, sinistral portal hypertension secondary to isolated splenic vein thrombosis or obstruction, or splenic mass presumed to be a neoplasm. Splenectomy is occasionally included in en bloc resection for malignancy in an adjacent organ. Distal pancreatectomy usually includes splenectomy if preservation of the splenic artery and vein is either contraindicated (malignancy) or technically impossible.

Post-Splenectomy Sepsis

Most pediatricians believe that children who have undergone splenectomy before the age of 5 years should be treated with a daily dose of penicillin until the age of 10 years. The benefit of prophylactic penicillin is less clear in children over 5 years old and in adults. All patients who have undergone non-elective splenectomy should be immunized with Pneumovax (a non-viable pneumococcal vaccine). When planning elective splenectomy, patients should be immunized with Pneumovax, and against Haemophilus influenza and meningococcus, preferably two or more weeks before operation.

Qualifications for Performing Operations on the Spleen

The qualifications of a surgeon performing any operative procedure should be based on training (education), experience, and outcomes. At a minimum, surgeons who are certified or eligible for certification by the American Board of Surgery, the Royal College of Physicians and Surgeons of Canada, or their equivalent should perform emergency and elective operations on the spleen. For laparoscopic splenic procedures, surgeons should have advanced laparoscopic training and expertise.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate use of surgical treatment for diseases or injuries of the spleen
- Laparoscopic splenectomy, which is becoming increasingly common, appears to be safe and associated with less pain, shorter hospital stay, and more rapid convalescence than traditional open splenectomy.

POTENTIAL HARMS

- Operative mortality for elective splenectomy is less than 1% except in patients with myeloproliferative disorders, who are at increased risk for postoperative hemorrhage. In trauma patients, the mortality rate for splenectomy depends upon the extent of other injuries. Postoperative complications of open splenectomy include pneumonia, thrombotic complications, wound infection, hernia formation, hemorrhage, subphrenic abscess, pancreatic abscess/fistula, pancreatic pseudocyst, and, rarely, gastric fistula/perforation. These potential complications also exist when using the laparoscopic approach, although wound complications consist primarily of herniation at trocar sites.
- Late sequelae related to splenectomy are much more common in children, especially those under 6 years old. Overwhelming post-splenectomy sepsis is a rare (less than l%) but potentially fatal complication of splenectomy. It is much more common in children younger than age 6 who have not yet developed extra-splenic specific immunity to encapsulated organisms such as pneumococcus and meningococcus. Adults are susceptible to similar infections following splenectomy, but the incidence is likely much lower than in children.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

These patient care guidelines were written for the primary care physicians on a variety of digestive diseases to assist on when to refer the patient for surgical consultation. Their goal is to guide primary care physicians to the appropriate utilization of surgical procedures on the alimentary tract or related organs, and they are based on critical review of the literature and expert opinion. Both of the latter sources of information result in a consensus that is recorded in the form of these Guidelines. The consensus addresses the range of acceptable clinical practice and should not be construed as a standard of care. These Guidelines require periodic revision to ensure that clinicians utilize procedures appropriately but the reader must realize that clinical judgment may justify a course of action outside of the recommendations contained herein.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Foreign Language Translations

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Society for Surgery of the Alimentary Tract (SSAT). Surgical treatment of disease and injuries of the spleen. Manchester (MA): Society for Surgery of the Alimentary Tract (SSAT); 2004 Feb 21. 3 p. [5 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 Feb 21

GUIDELINE DEVELOPER(S)

Society for Surgery of the Alimentary Tract, Inc - Medical Specialty Society

SOURCE(S) OF FUNDING

Society for Surgery of the Alimentary Tract, Inc

GUIDELINE COMMITTEE

Patient Care Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Society for Surgery of the Alimentary Tract, Inc. Web site.

Print copies: Available from the Society for Surgery of the Alimentary Tract, Inc., 900 Cummings Center, Suite 221-U, Beverly, MA 01915; Telephone: (978) 927-8330; Fax: (978) 524-0461.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Society for Surgery of the Alimentary Tract (SSAT). Surgical treatment of disease and injuries of the spleen (Spanish version). Manchester (MA): Society for Surgery of the Alimentary Tract (SSAT); 2004 Feb 21. Electronic copies available from the Society for Surgery of the Alimentary Tract, Inc. Web site.

- Gadacz TR, Traverso LW, Fried GM, Stabile B, Levine BA. Practice guidelines for patients with gastrointestinal surgical diseases. J Gastrointest Surg 1998;2:483-484.

Print copies: Available from the Society for Surgery of the Alimentary Tract, Inc., 900 Cummings Center, Suite 221-0, Beverly, MA 01915; Telephone: (978) 927-8330; Fax: (978) 524-8890.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on October 19, 2004.

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